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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,471	07/17/2002	Jeffrey Rahn	107153	7900

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EXAMINER
HO, ALLEN C

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 05/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H·A

Office Action Summary	Application No.	Applicant(s)	
	10/064,471	RAHN, JEFFREY	
	Examiner	Art Unit	
	Allen C. Ho	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,8-13 and 15-18* is/are pending in the application.

4a) Of the above claim(s) *4,5,8-13 and 15-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 June 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stettner *et al.* (U. S. Patent No. 5,629,524).

With regard to claim 1, Stettner *et al.* disclosed an imaging system (Fig. 5), comprising: an input device (**32**) that includes a plurality of pixel devices, each pixel device including: a multi-color sensor (**17**) that provides an electronic signal; at least one transistor (**32**, **33**, **34**) connected to the sensor; a first capacitor (C_1) that is selectively connected to the sensor; a second capacitor (C_2) that is selectively connected to the sensor; and a controller (**36**) that selectively stores the entirety of the electronic signal provided by the sensor and that represents a multi-color image in either the first capacitor or the second capacitor. Stettner *et al.* disclosed that the sensor (**17**) is a silicon PIN diode (column 6, lines 24-29). A silicon PIN diode has a spectral sensitivity in the visible light, which makes it a multi-color sensor.

However, Stettner *et al.* failed to teach that the imaging system further comprises an output device including a two-dimensional array of pixels, each pixel device corresponds to a respective pixel in the two-dimensional array of pixels.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an output device (*e. g.*, a display) that comprises a two-dimensional array of pixels, since a person would be motivated to view the image detected by the imaging system.

With regard to claim 2, Stettner *et al.* disclosed the imaging system according to claim 1, the pixel device further comprising: a plúrality of transistors (**M7A** and **M7**, **M8A** and **M8**) and at least two control signals, one of the at least two control signals controlling one of the plurality of transistors so that the electronic signal is stored in the first capacitor, and the other one of the at least two control signals controlling another one of the plurality of transistors so that the electronic signal is stored in the second capacitor (column 8, lines 36-67).

With regard to claim 3, Stettner *et al.* disclosed the imaging system of claim 2, wherein the first capacitor is independently active for greater than 10 microseconds. This claim fails to set forth additional structural limitation. Accordingly, it is rejected with claim 2.

With regard to claim 18, Stettner *et al.* disclosed an imaging system, comprising: an input device that includes a plurality of pixel devices, each pixel device including: a multi-color sensor (**17**) that provides an electronic signal; at least one transistor (**32, 33, 34**) connected to the sensor; a first capacitor (C_1) that is selectively connected to the sensor; a second capacitor (C_2) that is selectively connected to the sensor; and a controller (**36**) that: controls the electronic signal that represents a multi-color image provided by the sensor; and selectively stores the entirety of the electronic signal that represents the multi-color image in either the first capacitor or stores the entirety of the electronic signal that represents the multi-color image or an x-ray image in the second capacitor (column 8, lines 36-67). Stettner *et al.* disclosed that the sensor (**17**) is a silicon

PIN diode (column 6, lines 24-29). A silicon PIN diode has a spectral sensitivity in the visible light, which makes it a multi-color sensor.

However, Stettner *et al.* failed to teach that the imaging system further comprises an output device including a two-dimensional array of pixels.

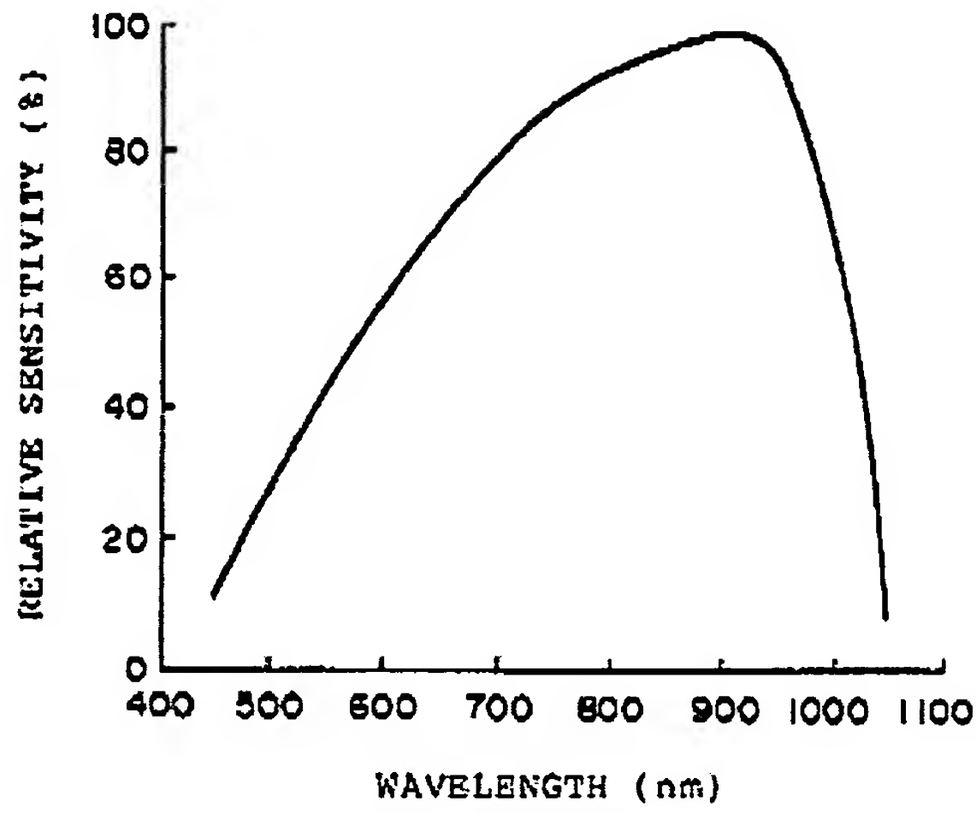
It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an output device (*e. g.*, a display) that comprises a two-dimensional array of pixels, since a person would be motivated to view the image detected by the imaging system.

Response to Arguments

3. Applicant's arguments filed 01 May 2006 with respect to the specification have been fully considered and are persuasive. The objections of the specification have been withdrawn.

4. Applicant's arguments filed 01 May 2006 have been fully considered but they are not persuasive.

The applicant argues that the sensor disclosed by Stettner *et al.* is an x-ray sensor, which does not detect visible colors. The examiner respectfully disagrees. Stettner *et al.* disclosed that the sensor (**17**) is a silicon PIN diode (column 6, lines 24-29). A silicon PIN diode has a spectral sensitivity in the visible light, which makes it a multi-color sensor. A typical spectral sensitivity curve (see figure below) of a silicon PIN diode is disclosed by Kiyomoto *et al.* (U. S. Patent No. 5,844,682) and Amnon Yariv, which shows that a silicon PIN diode can detect visible light from about 400 nm (blue) to about 700 nm (red).



Therefore, the rejections are being maintained.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

(1) Kiyomoto *et al.* (U. S. Patent No. 5,844,682) disclosed a spectral sensitivity of a silicon PIN diode (column 16, lines 27-31).

(2) Nicholas Tsoulfanidis. Measurement and Detection of Radiation, second edition (Washington, DC: Taylor & Francis, 1995), p. 235-263. Tsoulfanidis discussed the principle of a semiconductor detector as a high-energy radiation detector.

(3) Amnon Yariv. Optical Electronics, third edition (New York, NY: Holt, Rinehart, and Winston, Inc., 1985), p. 367-376 and Fig. 11-15.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Allen C. Ho

Allen C. Ho, Ph.D.
Primary Examiner
Art Unit 2882

09 May 2006